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(71) Applicant (*for all designated States except US*):
SUKRAM OY [FI/FI]; Lapinkävijäntie 1, FIN-96100
Rovaniemi (FI).

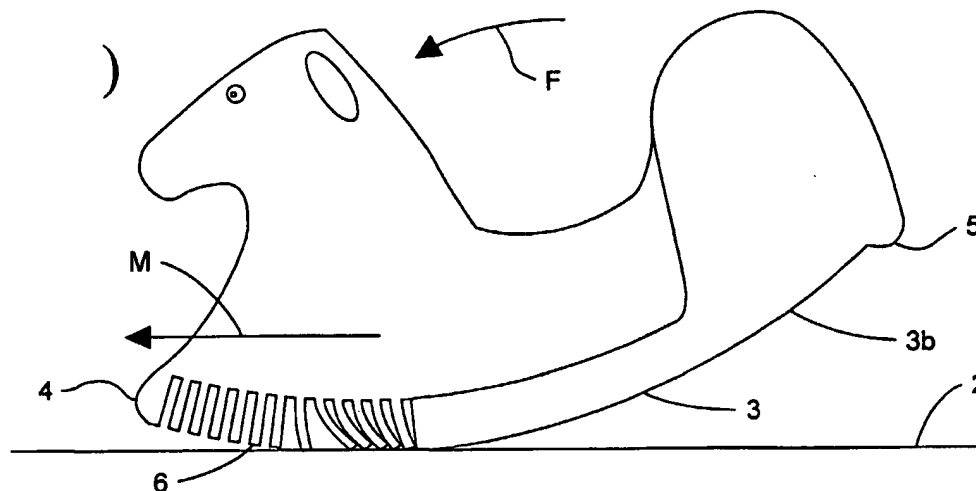
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(72) Inventor; and
(75) Inventor/Applicant (*for US only*): TOLONEN, Markus
[FI/FI]; Pulkkatie 3, FIN-96100 Rovaniemi (FI).

(74) Agent: LAURINOLLI, Tapio; Patenttitoimisto Tapio
Laurinolli, P.O. Box 258, FIN-90101 Oulu (FI).

(54) Title: ROCKING HORSE OR LIKE ROCKING DEVICE



(57) Abstract: A rocking horse or like device which includes a curved bas for rocking and an arrangement for moving the device in connection with rocking is characterized in that the arrangement for moving includes in the curved bottom (3) of the base in the vicinity of an end thereof a structure (6) made of elastic and flexible material and consisting of ridges transverse to the curving direction so that the cross section of the structure is comb-like, whereby the ridges of the structure yield and bend by the action of the masse and the rocking motion (F) of the device allowing the device to move (M).

WO 01/87442 A1

ROCKING HORSE OR LIKE ROCKING DEVICE

FIELD OF THE INVENTION

The invention is related to a rocking horse or like rocking device and, especially, to this
5 kind of device which includes a curved base for rocking and an arrangement for moving the device in connection with rocking.

BACKGROUND OF THE INVENTION

Solutions have been combined with rocking horses or like rocking devices by means of
10 which they are got to move in connection with rocking. Some solutions include wheels mounted on the front part of the curved base, e.g. rockers. As the device is rocked forward heavily enough, the weight of the device comes largely or totally on the wheels and the rocker itself may disengage from the ground, whereby the device is moved forward by the force of the rocking motion. This kind of solutions have been presented in US patents
15 4989856 and 5466191, for example. In some solutions, a leg or several legs have been pivotally attached to the body of the rocking device by means of which legs motion is achieved in connection with rocking. In the solution of US patent 4834402 there are legs which have been pivotally attached to the front part of the body of the rocking horse, the legs being extended below the curved base and being operated by means of pedals. In the
20 solution of GB 2103496, the arcuated base includes two members: the rear member is fixed and the leg-like front member is pivotally attached to the body of the device. In US patent 5503410, same kind of solutions are presented in which either front or rear leg structure is pivotally attached to the body of the device.

In the known solutions, various members (legs, wheels, pedals, wires, etc.) and support
25 structures, pivotal attachments or bearings for these are added to a rocking device. These members make device is more complicated and more expensive to manufacture. Moving parts are also prone to wearing and breakage.

SUMMARY OF THE INVENTION

30 An object of the invention is to present a solution for moving a rocking horse or like rocking device in connection with rocking by means of which the above problems are largely avoided.

To achieve these objects, a rocking horse or like rocking device according to the invention, which includes a curved base for rocking and an arrangement for moving the
35 device in connection with rocking, is characterized in that the arrangement for moving the device includes in the curved bottom of the base in the vicinity of an end thereof a structure

made of elastic and flexible material and consisting of ridges or like protruding members transverse to the direction of curving so that the cross section of the structure in side view is comb-like, whereby the ridges or like members yield and bend by the action of the mass and rocking motion of the device allowing the device to move.

5 In an embodiment, said structure is made of foam plastic. The rocking device may be essentially entirely made of foam plastic.

In another embodiment, said structure covers a portion of the curved base in the front part thereof which is about 20 to 40 % of the base.

10 BRIEF DESCRIPTION OF THE DRAWINGS

The invention and some embodiments thereof are described in the following in further detail with reference to the accompanying drawings, in which:

Figs. 1(a), 1(b) and 1(c) represent schematically in side view an embodiment of the rocking horse according to the invention and the operation thereof;

15 Figs. 2, 3 and 4 show, respectively, a scematical side view, front view and sectional view along line A-A of Fig. 2 of another embodiment of the rocking device according to the invention; and

Figs. 5 and 6 show shematical side views of some other embodiments of the rocking device according to the invention.

20

DETAILED DESCRIPTION OF THE INVENTION

Rocking toys presented in Figs. 1 to 5 may be manufactured as one piece of dense, elastic and flexible foam plastic. Such a foam plastic, for example, of which thin foam pads are manufactured has suitable properties.

25 In Figs. 1(a), 1(b) and 1(c), rocking device 1A is represented the form of which imitates horse and in which the rocking base 3 is a little wider than the body part 7, 8 so that rocker-like members are formed on the sides of the base on which a rider may keep his or her feet. Also the rear part 9 is widened. For holding, recesses 10 are made on the head part 7. In the front end 3a of the base 3 there is a structure 6 which is comb-like in section, covers about
30 one third of the base, and is in the front end restricted by a bumper 4. In the rear end 3b of the base there is a stopper 5 the purpose of which is to prevent the rocking device from swinging around as rocked backwards.

Fig. 1(a) shows how the rocking horse 1A is rocked backwards in the way indicated by arrow B from the basic position shown by broken line. In Fig 1(b), the rocking horse is
35 rocking forward in the way indicated by arrow F. As the ridges of the structure 6 in the front end of the base 3 come during rocking forward one by one against the ground 2, they yield

and bend in the way shown in the figure, and the device moves forward, as indicated by arrow M, by force of the rocking motion. In Fig 1(c), rocking forward and motion M have been continued to the extreme position in which the bumper 4 of the front end of the base 3 has become against the ground 2. The rocking device rocking then back, the ridges of the structure 6 are released one by one and, for their elasticity, are returned back to the basic position thereof. The force thereof is not great enough for moving the device backwards but rocking backward happens in the place to which the device was moved during rocking forward.

Figs. 3 and 4 show in side view and front view, respectively, rocking device 1B according to the invention which is formed to resemble a common otter. The corresponding parts are indicated by the same reference signs as in the embodiments of Figs. 1(a) to 1(c). Fig. 4 shows the section along line A-A of Fig. 2. For making manufacturing easier, especially if the rocking device is manufactured as one piece of foam plastic, for example, the body part 7, 8, 9 is entirely of the same width, a little narrower than the base 3. For further making manufacturing easier, an opening 10 goes through the head part 7 for providing handles for holding.

Fig. 5 shows rocking device 1C according to the invention having an abstract form. The corresponding parts are indicated by the same reference signs as in the embodiments of Figs. 1(a) to 1(c) and Figs. 2 to 4.

The embodiments of the rocking device presented above are thought to be manufactured as one piece of the same material. An elastic and flexible rocking device made totally of foam plastic, for example, is comfortable, light and quite soft, and so a suitable and safe toy also for small children.

A rocking device according to the invention may be manufactured also in such a way, for example, that only the base or the structure 6 of the base are manufactured, in view of the operation thereof, of the best possible material with suitable elasticity, flexibility and strength. The other parts of the rocking device may be manufactured of a little harder and lighter material, for example, which must not endure repeated bending and returning.

The rocking device may be manufactured also so that the body part is made in a traditional way, e.g. of wood. One possible realization is represented schematically by Fig. 6. The body part 11, head 12 and legs 14, 15 of the rocking device 1D according to the invention may be of wood. In the head part 12 there are conventional pins 13 for holding. The legs are attached to an arcuated plate 16 which may be of plywood, for example. A base 3 made of foam plastic, for example, is attached to the plate 16 and is similar to the base 3 of the embodiments described above, the corresponding parts being indicated with same reference signs.

The thickness of the ridges, slats or like members may be 1 to 2 centimeters and the length (depth) 5 to 8 centimeters, for example. A suitable material may be also silicone rubber, for example. As the material for manufacturing the structure 6 may be be relatively expensive, it may be thought that it is a separate part which is attached in a suitable way to
5 the rocking device and may be replaced if necessary.

The invention may vary within the scope of the accompanying claims.

CLAIMS

1. A rocking horse or like rocking device, which includes a curved base for rocking and an arrangement for moving the device in connection with rocking, **characterized** in that the
5 arrangement for moving the device includes in the curved bottom of the base (3) in the vicinity of an end (3a) thereof a structure (6) made of elastic and flexible material and consisting of ridges or like protruding members transverse to the direction of curving so that the cross section of the structure in side view is comb-like, whereby the ridges or like
10 members yield and bend by the action of the mass and rocking motion (F) of the device (1A) allowing the device to move (M).
2. A rocking horse or like rocking device according to claim 1, **characterized** in that said structure (6) is made of foam plastic.
- 15 3. A rocking horse or like rocking device according to claim 1 or 2, **characterized** in that it is made essentially entirely of foam plastic.
4. A rocking horse or like rocking device according to claim 1, **characterized** in that said structure (6) covers a portion of the curved base (3) in the front part (3a) thereof which
20 is 20 to 40 % of the base.

1/3

Fig. 1(a)

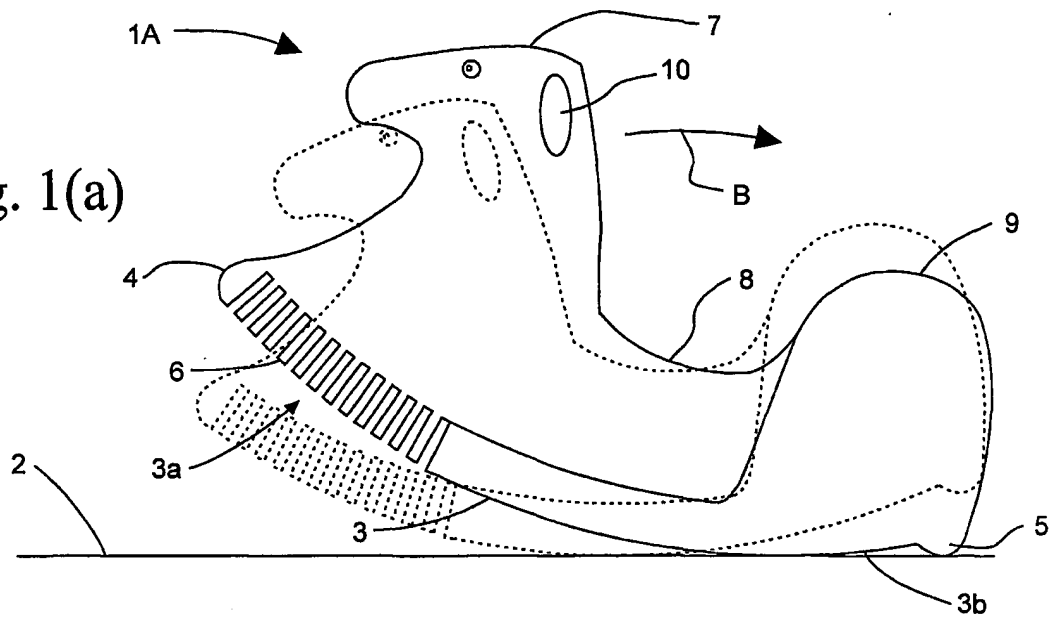


Fig. 1(b)

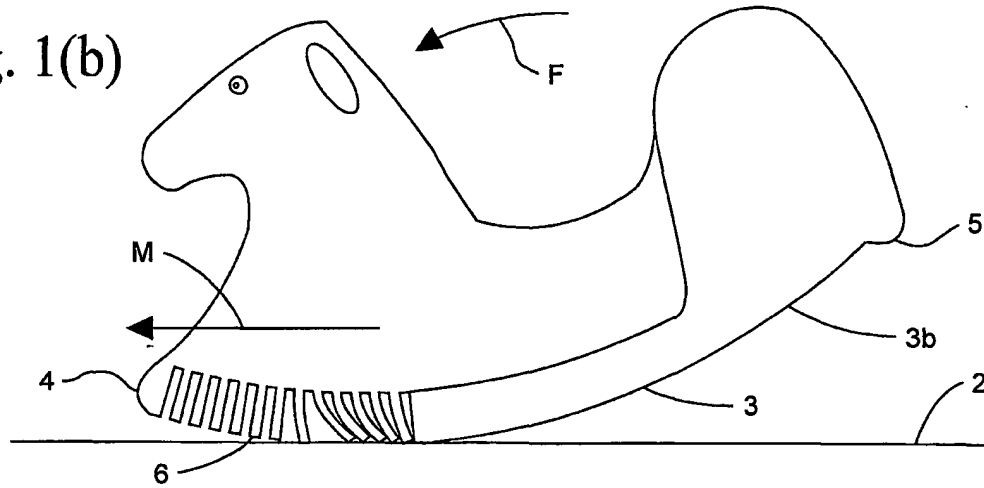
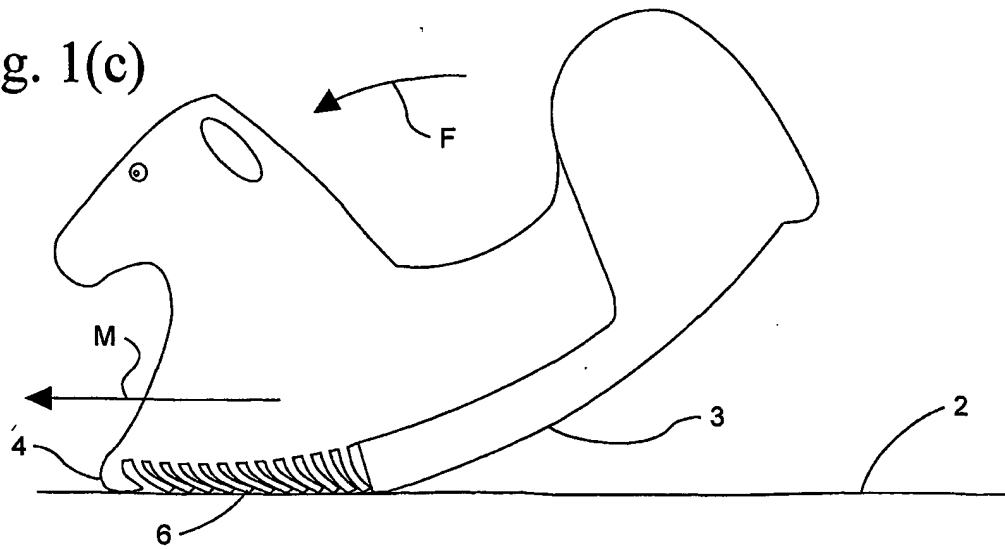


Fig. 1(c)



2/3

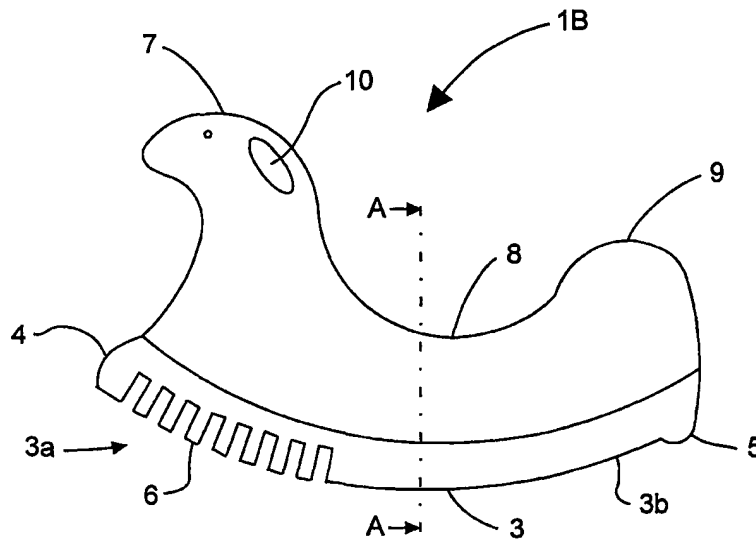


Fig. 2

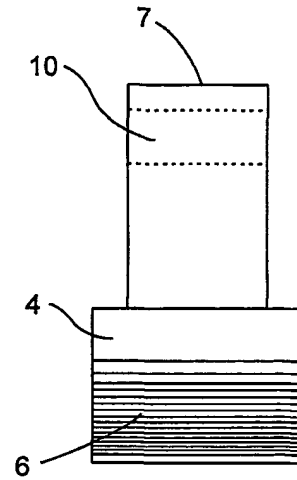


Fig. 3

Fig. 4

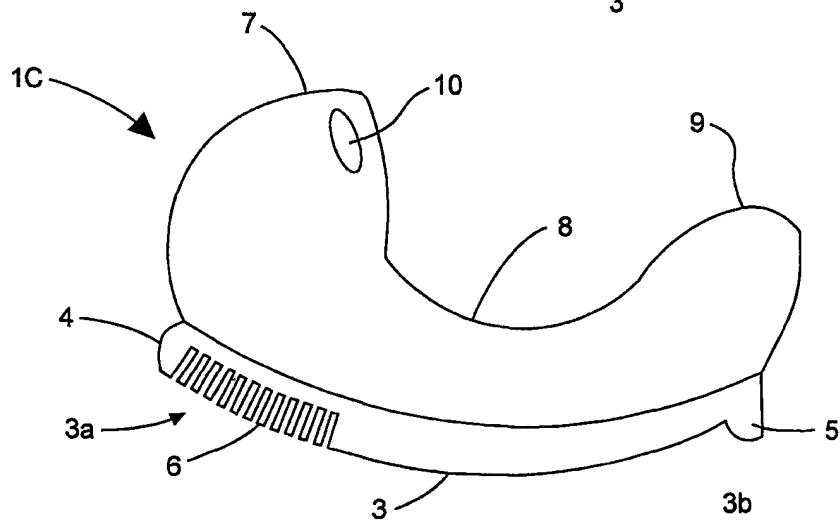
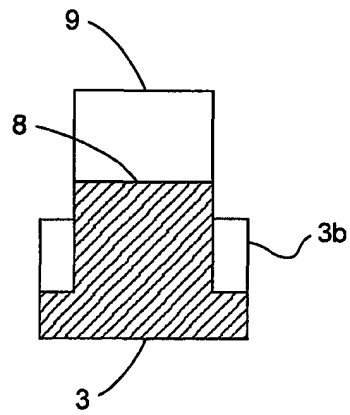


Fig. 5

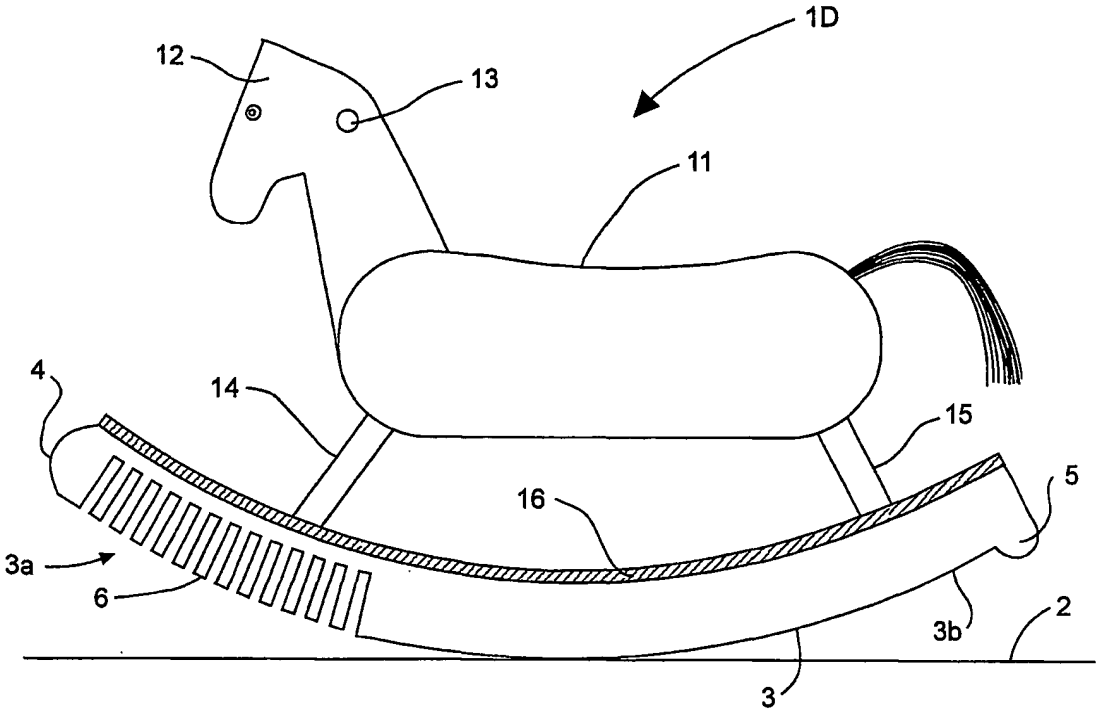


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 01/00491

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A63G 15/04 // A63G 19/00, A63G 13/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A63G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI-DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CH 270563 A (DR ULISSE DE WOLFF), 1 December 1950 (01.12.50), figures 1,3, Entire document	1,4
Y	--	2,3
Y	DE 19860830 A1 (KUGLER, JOST-ULRICH), 6 July 2000 (06.07.00), figure 1, abstract	2,3
X	US 3064987 A (M KATOGIR), 20 November 1962 (20.11.62), column 2, line 5 - line 24, figure 1, claim 1	1
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☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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- "E" earlier application or patent but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

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"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Alexandra Widelund/EK
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CH 248829 A (ANNA ITEL-SCHREIBER), 16 February 1948 (16.02.48), figure 1, claim 1 --	1,4
A	US 1635375 A (K A MATHERS), 12 July 1927 (12.07.27), column 1, line 1 - line 14, figure 1 -- -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/07/01

International application No.

PCT/FI 01/00491

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
CH	270563	A	01/12/50	NONE	
DE	19860830	A1	06/07/00	WO 0040314 A	13/07/00
US	3064987	A	20/11/62	NONE	
CH	248829	A	16/02/48	NONE	
US	1635375	A	12/07/27	NONE	

DERWENT-ACC-NO: 2002-026569

DERWENT-WEEK: 200222

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TITLE: Rocking horse includes a curved base for rocking and an arrangement for

moving horse in connection with rocking

INVENTOR-NAME: TOLONEN, M

PRIORITY-DATA: 2000FI-0001207 (May 19, 2000)

PATENT-FAMILY:

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AU 200162377 A	November 26, 2001	N/A	000	A63G 015/04
WO 200187442	November 22, 2001	E	012	A63G 015/04
A1	November 20, 2001	N/A	000	A63G 015/04
FI 200001207 A				

INT-CL_(IPC): A63G013/00; A63G015/04 ; A63G019/00

ABSTRACTED-PUB-NO: WO 200187442A

BASIC-ABSTRACT: NOVELTY - The horse (1A) has an arrangement for rocking in a

curved bottom of it's base (3) in the vicinity of an end (3a) of an elastic and flexible foam plastic structure (6). The structure consists of ridges or similar protruding members transverse to the direction of curving so that the cross section of the structure in side-view is comb-like. The ridges or protruding members yield and bend by the action of the mass and the rocking motion (B) of the horse allowing the device to move.

USE - None given.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic side view of an embodiment of the rocking horse.

Rocking horse 1A

Base of rocking horse 3

End of foam plastic structure of rocking horse 3a

Foam plastic structure of rocking horse 6

Rocking motion of horse. B